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ALLEGHENY FOREST EXPERIMENT STATION*

Technical Note No. 20
Bureau of Plant Industry

Philadelphia, Pa.
March 28, 1938.

DECAY IN BLACK CHERRY DAMAGED BY GLAZE

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Bailey Sleeth**

A cursory examination made on a stand sanitation and salvage operation on the Kane Experimental Forest, Kane, Pa., revealed that wood-rotting fungi had entered live black cherry (Prunus serotina) trees through branches and tops broken by the severe ice storm of March, 1936, and had caused a white decay in the exposed heartwood. Because of the local interest in the situation some data were collected in October, 1937, on the entrance and penetration of wood-rotting fungi in glaze-damaged black cherry.

In the fall of 1936 Campbell 1/ observed in the same general area severe glaze damage and stated: "Black cherry is very resistant to decay. Top injuries will offer a low decay hazard, as indicated from trees cut during a sprout dissection study." Even though the decay hazard, as suggested by Campbell, may be low the excessive ice damage in black cherry increases the possibility of extensive losses from decay in this area. Downs 2/ found that 59% of the black cherry trees were damaged and 41% were severely damaged in second-growth stands by the storm of March 17-19, 1936. The total damage from broken branches and tops was much greater than that resulting from split crotches. Out of 2,180 black cherry trees tallied only 13 were split at the crotch.

From the tops of newly felled black cherry cut in October 1937, 25 specimens of glaze breakage to tops and branches were collected. From these isolations were made. The results of these isolations are presented in Table 1. Thirteen of the trees yielded Polyporus versicolor Fr., 10 yielded Stereum rameale Schw., and only 2 did not yield wood-rotting fungi. In 52% of the cases visible decay had progressed below the break 15 inches or more. In 40% of the trees either P. versicolor or S. rameale was cultured 18 to 24 inches below the break. This indicates that the decay had progressed rapidly since the breakage occurred only 19 months previously.

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* In cooperation with the University of Pennsylvania.

** Assistant Pathologist, Civilian Conservation Corps, in cooperation with the Division of Forest Pathology, Bureau of Plant Industry.

1/ Campbell, W. A. Decay hazard resulting from ice damage in northern hardwoods. Jour. For. 35: 1156-1158, 1937.

2/ Downs, Albert A. Glaze damage in the birch-beech-maple-hemlock type of Pennsylvania and New York. Jour. For. 36: 63-70, 1938.

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TABLE 1. Fungi isolated from glaze-damaged black cherry at various distances below break. 1/

Tree No.	Size of broken branch or top	Distance below break of ___ : Visible decay	Discoloration	Distance below broken end at which indicated organism was isolated: Molds and bacteria	Cytospora	Stereum rameale	Polyporus versicolor	None
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
21	3	6	15	3, 10	10	-	-	-
22	4	12	30	-	28	-	3, 12	-
23	4	24	-	-	-	12,22	-	-
24	2	6	-	4	-	-	-	-
25	2	8	15	-	-	3	-	12
26	3	3	12	-	-	3, 8	-	-
27	3	12	18	-	-	2, 12	-	-
28	2	12	-	-	3	3, 12	-	-
29	2	18	-	-	-	-	6, 18	-
30	3	6	15	6	-	6	-	-
31	5	18	24	6	-	-	6, 24	-
32	2	15	-	-	-	-	6	-
33	2	10	18	-	-	-	6, 18	-
34	2	14	-	-	-	-	6	-
35	3	10	-	-	-	3	-	-
36	4	18	-	-	-	-	6, 18	-
37	2	18	30	-	-	-	6	18, 30
38	2	18	30	-	30	6, 18	-	-
39	4	18	-	-	-	-	6, 18	-
40	4	18	-	-	-	6, 18	-	-
41	4	18	-	-	-	-	6	-
42	2	18	-	-	-	-	6	-
43	2	18	-	18	-	-	6, 18	-
44	3	24	-	-	-	6, 18	-	-
45	3	8	-	-	-	-	8	-

These data on cultural results (Table 1) are presented in detail chiefly as a record of fungi found in the ice-damaged stands of black cherry. Any estimate of the loss that might be caused by wood-rotting fungi over a period of years is problematical. At present P. versicolor and S. rameale are generally considered to be saprophytic sapwood rotters only, but apparently under unusual conditions they become heart rotters as well. It would seem likely that these fungi will either continue to progress in the living trees in which they are now active or will be supplanted by other fungi which are definitely recognized as heart rotters. In either case, broken tops or branches with exposed heartwood provide an avenue of entrance for wood-rotting fungi which are capable of causing considerable damage. The loss due to top decay in black cherry stands seriously damaged by glaze will probably not be inconsiderable. Progressive utilization of the more severely damaged stands on a selective basis seems to be one practical answer to the problem.

1/ Cultures identified by R. W. Davidson.